NORTHROP GRUMMAN
Information Technology

CM Connect

FLSIC Brief
22-25 Oct 02

- **History**
- **Challenge**
- **Solution**
- **The Way Ahead**
- **Demonstration**

- **The 3 Steps of Configuration Management History DD 1149 and 4790 CK**

  – Step 1 Manual entry on paper

  – Step 2 Computer Aided with manual entry

  – Step 3 Computer Aided with automated entry to multiple forms

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- **We are Northrop Grumman Information Technology**

- **For the last 10 years we have been supporting SPAWAR in Configuration Management**

- **Today we are here to demonstrate an automated process we have developed and is in use supporting SPAWAR Configuration Management and Logistics**

- **Productivity :**

  – Hampered by a disparate set of processes that do not allow for a reliable end product.

- **System Baseline Tracking :**

  – Constant problem area for PMW engineers to maintain baseline configurations.

- **Security Requirements and concerns :**

  – DOD PKI Certification, SPAWAR Network Security Vulnerability Scans, physical access to server, remote administration.
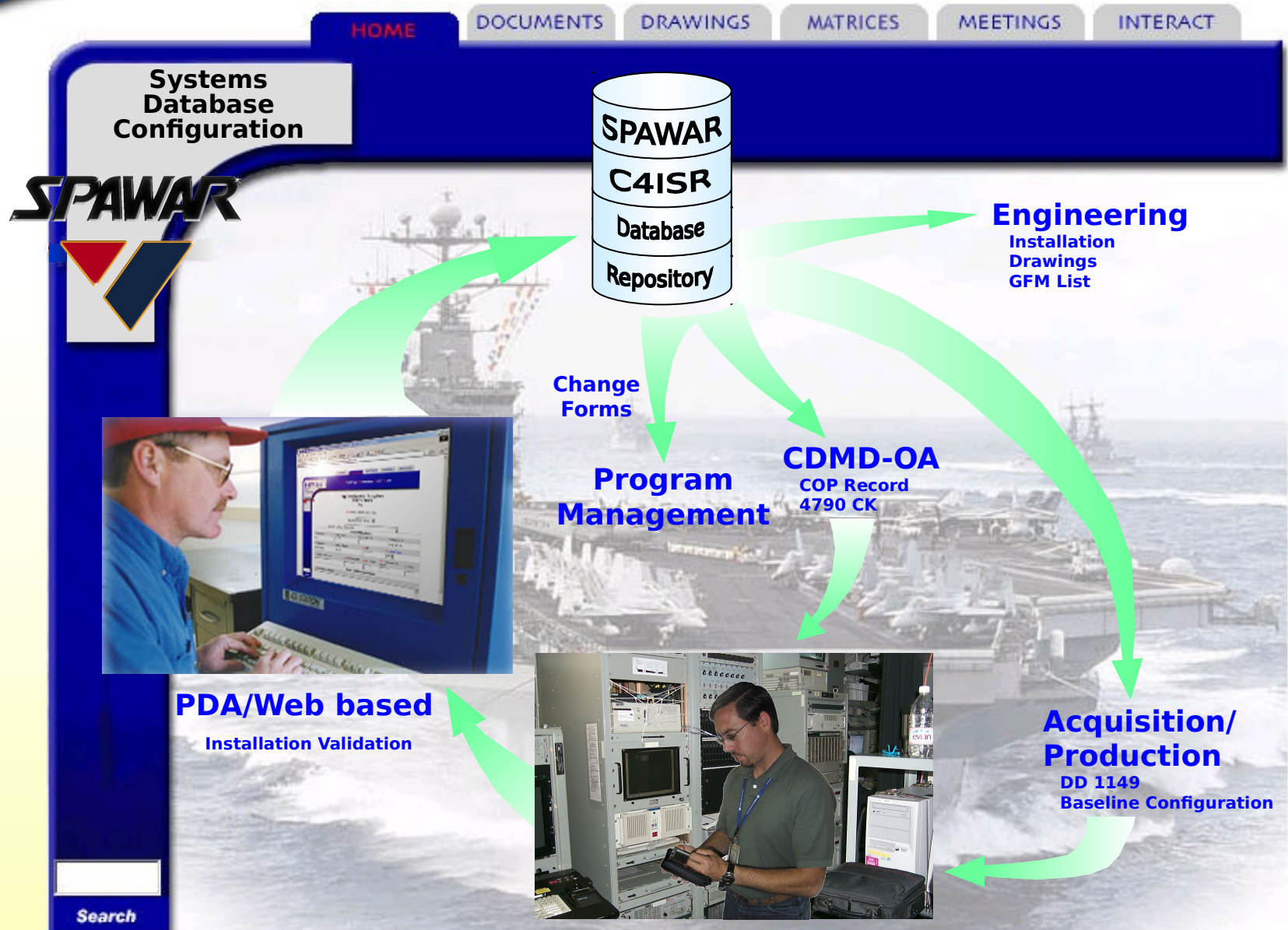
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- **Developed Web site for current Functional Baseline Configuration (FBC) / Ship Specific Configuration (SSC) Drawings, CM and related technical documentation.**
  - Provide Systems Engineering working site which hosts SSC's, FBC's, SEWG/CFWG information, Change Form data, DD1149, 4790 CK and all related CM data.

- **FBC and SSC development.**
  - Process and maintain all JMCIS/GCCS-M FBC/SSC's with supporting GFM lists on Web site.

- **DD 1149 and 4790 CK**
  - Provide open reports on-line and offer assistance to AIT's for completed requirements.

- **Automated system will allow installers to enter actual engineering data on line and enable PMW engineers to keep track of HW and SW installed at each site.**

- **Identify the Solution:**
  - Developed a Architect Web Application that encompasses collaborative workflow processes, data archiving and retrieval, and provide real-time access to accurate install data

- **Implement the Solution:**
  - Developed a relational database structure to store data

  - Constructed a secure, web-based user interface for real-time access and manipulation of data

  - Utilizes role-based security to provide for different levels of access to data

  - Provides for custom, user-driven reports and searches

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CONFIGURATION CONTROL AND EFFECTIVE CHANGE MANAGEMENT

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2921 AVENUE B NORTH, BLDG 1639	7. DATE MATERIAL REQUIRED (YYYYMMDD)	8. PRIORITY
NORTH CHARLESTON, SC 29405	20020812	TP-1
2. TO (include ZIP code)	9. AUTHORITY OR PURPOSE	
V20550-FSC	JON: A9OVDP2A00 CON:N6600198F3044	
6160 FAIRMONT AVE.	10. SIGNATURE	11a. VOUCHER NUMBER & DATE
SUITE H	J REAVES	HUC02080909345
SAN CIEGO, CA 92120-3427	12. DATE SHIPPED (YYYYMMDD)	b.
3. SHIP TO - MARK FOR		NBR OF PIECES: 2
MARK GABRIELS (619) 280-7477	13. MODE OF SHIPMENT	14. BILL OF LADING NUMBER
USS TARAWA (LHA 1)		
GCCS-M	15. AIR MOVEMENT DESIGNATOR OR PORT REFERENCE NUMBER	

4. APPROPRIATIONS SYMBOL AND SUBHEAD	OBJ. CL.	BUR. CONT. NO.	SUBALLOT	AUTHORIZATION ACCTG ACTIVITY	TRANS. TYPE	PROPERTY ACCTG ACTIVITY		COUNTRY	COST CODE	AMOUNT
									N86F	

ITEM NO. (a)	3	UNIT OF ISSUE (c)	QUANTITY REQUESTED (d)	SUPPLY ACTION (e)	TYPE CONTAINER (f)	CONTAINER NOS. (g)	UNIT PRICE (h)	TOTAL COST (I)
1	NT PC SERVER	EA	1				10641.10	10641.10
	PN: 165-32100							
	SN: A0214							
	RCPID004188							
	INVENTORY NOT REQUIRED BY 131 PERSONNEL							
	FORKLIFT REQUIRED/2PALLETS							
	3112 X6366 C HUFF							
	Comments:SHIP FASTEST TRACABLE MEANS/PACKING REQUIRED							
2	12/24GB DDS 3 DAT DRIVE, EXTERNAL	EA	2				981.00	1962.00
	PN:(C5653C)							

15. TRANSPORTATION VIA MATS OR MSTS CHARGEABLE TO

17. SPECIAL HANDLING: SERIAL # 350: SERIAL # 350

18	ISSUED BY	TOTAL CONTAINER	TYPE CONTAINER	DESCRIPTION	TOTAL WEIGHT	TOTAL CUBE	19	CONTAINERS RECEIVED EXCEPT AS NOTED	DATE (YYYYMMDD)	BY	SHEET TOTAL
							R E C				
	CHECKED BY										

Sheet1 / Sheet2 / Sheet2 (2) / Sheet2 (3) / Sheet2 (4) / Sheet2 (5) /

Inbox - M... 157 CM C...

4790 CK Form

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HOME | DOCUMENTS | DRAWINGS | MATRICES | MEETINGS | INTERACT

Systems Database Configuration

● Field Changes ● Suitable Subs ● ECP ● NCR ● ECO

SPAWAR

Ship's Configuration Change Form FCB-056
OPNAV 4790/CK

View printable version of the 4790/CK Form

Review This CK for Approval

Installer: Jim Durance -- jdurance@sd.fuentez.com

Form Action Type: Completed Maintenance Action with no Prior Deferral

Section I Job Identification   edit

(1) Ship's UIC:	(2) Work Center:	(3) Job Seq. Num:	(4a) Alteration ID:	(4b) Change ID:
20550			LHA-1-FCB-056	FCB-056

(A) Ship Name:	(B) Hull Number:	(5) EIC:	(6) Action Taken:
USS Tarawa	LHA-1	HM10000	5B

(7) Equipment Noun Name:	(8) S/F MHRS. EXP.:	(9) Act. Maint.:	(10) Completion Date:	(11) M/R:
AN/USQ-119C(V)13				

Section II Job Description/Remarks

(12) Job Description / Remarks:

UPGRADE THE EXISTING GENSER GCCS-M SYSTEM WITH HP-3600 COMPUTERS AT THE SERVER LOCATIONS.

Section III Component Configuration Change Indentification

DD1149 Signed? yes **1 of 52**   edit

(1) Ship's UIC:	(2) Work Center:	(3) Job Seq. Num:
20550		

(13) Component Noun Name:

Processor, Ruggedized

Inbox - Microsof...

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Ship's UIC	Work Center	Job Seq. Num	Action Taken	Ship Name	Hull Number	EIC	MR
20550			5B	USS Tarawa	LHA-1	HM10000	

Equipment Noun Name	SF Mhrs Exp	ActMaint	Completion Date	MIP	AIL SIN
AN/USQ-119C(V)13				4951/001	49511

Job Description / Remarks

UPGRADE THE EXISTING GENSER GCCS-M SYSTEM WITH HP-3600 COMPUTERS AT THE SERVER LOCATIONS.

Continuation Data

Qty	CA	Alteration ID	Component Noun Name	Component ID	APL	Component Serial Number	Location	Next Higher Assembly	Name Plate Data
001	I	LHA-1-FCB-056	Processor, Ruggedized	HP C3600-2	00041775	SG20221087	05-73-1-C	OJ-683B(V)	
001	I	LHA-1-FCB-056	Processor, Ruggedized	HP C3600-2	00041775	SG20221105	05-65-1-C	OJ-683B(V)	
001	I	LHA-1-FCB-035	Processor, Ruggedized	HP C3600-2	00041775	SG22420365	04-65-1-C	OL-529(V)	
001	I	LHA-1-FCB-056	Processor, Ruggedized	HP C3600-2	00041775	SG22420391	04-65-1-C	OL-529(V)	
001	I	LHA-1-FCB-056	Processor, Ruggedized	HP C3600-5	00042977	SG22420413	04-65-1-C	OJ-685(V)	
001	I	LHA-1-FCB-056	Cartridge Tape Drive, 5.0 GB, 8mm	Eliant 820/8705	NA	6661599	04-65-1-C	HP-C3600-5 (JOTS 19)	
001	I	LHA-1-FCB-056	Processor, Ruggedized	HP C3600-2	00041775	SG22420412	04-65-1-C	OJ-685(V)	
001	I	LHA-1-FCB-056	Processor, Ruggedized	HP C3600-2	00041775	SG22420397	04-69-1-C	OJ-685(V)	
001	I	LHA-1-FCB-056	Processor, Ruggedized	HP C3600-2	00041775	SG22420479	04-69-1-C	OJ-685(V)	
001	I	LHA-1-FCB-056	Processor, Ruggedized	HP C3600-5	00042977	SG11620459	04-69-1-C	OJ-685(V)	
001	I	LHA-1-FCB-056	Processor, Ruggedized	HP C3600-2	00041775	SG22420409	04-69-1-C	OJ-685(V)	
001	I	LHA-1-FCB-056	Switch, OMNI Stack 5024	OS-5024	00044063	21530027	04-69-1-C		
001	I	LHA-1-FCB-056	Server, PC Rugged, 2RU, Vulcan I NT A+	165-32100	00043133	02080112C0179	04-69-1-C		
001	I	LHA-1-FCB-056	Processor, Ruggedized	HP C3600-2	00041775	SG22220475	04-69-1-C		
001	I	LHA-1-FCB-056	Processor, Ruggedized	HP C3600-2	00041775	SG15020938	04-69-1-C		
001	R	LHA-1-FCB-placeholder	Computer, Tactical	CP-2231(V)P1/USQ-119C(V)	00036157	6530A80035	04-69-1-C	OJ-685B(V)	
001	R	LHA-1-FCB-placeholder	Transceiver, Fiber Optic	FOT-F24	00035383	NA	04-69-1-C		
001	R	LHA-1-FCB-056	Computer, Tactical	CP-2231(V)8/USQ-119A(V)	00034580	6530A80061			
001	R	LHA-1-FCB-placeholder	Transceiver, Fiber Optic	FOT-F24	00035383	N			
001	R	LHA-1-FCB-placeholder	Transceiver, Fiber Optic	FOT-F24					

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Palm OS™ Emulator

#70 - 14

HullID

LHA-1 - USS Tarawa
LHA-2 - USS Saipan
LHA-3 - USS Belleau Wood
LHA-4 - USS Nassau
LHA-5 - USS Peleliu
LHD-1 - USS Wasp
LHD-2 - USS Essex
LHD-3 - USS Kearsarge
LHD-4 - USS Boxer
LHD-5 - USS Bataan

(Cancel)

- **Mobile databases for handheld users:**
  - Paperless electronic installation data update

A002	E221	T062	E033	T063	D008	E224	D032	E093	T057	E052	D011	T058
R03368	T0367	2	A		00042906		02030005		Switch, Route Protection (POC 912,100Mbps)	03-108-0-Q	000001	GCCS-M
R03368	T0369	2	A		00041775		SG20220476		Processor, Ruggedized	03-148-1-C	000001	GCCS-M
R03368	T0371	2	A		NA		D005		Computer, Tactical	03-119-1-C	000001	GCCS-M
R03368	T0373	2	A		00041775		SG20420939		Processor, Ruggedized	03-119-1-C	000001	GCCS-M
R03368	T0375	2	A		00042906		02030027		Switch, Route Protection (POC 912,100Mbps)	03-119-1-C	000001	GCCS-M
R03368	T0377	2	A		0344418		D006		Computer, Tactical	03-119-1-C	000001	GCCS-M
R03368	T0379	2	A		00041775		SG20220474		Processor, Ruggedized	03-119-1-C	000001	GCCS-M
R03368	T0381	2	A		00042906		02030004		Switch, Route Protection (POC 912,100Mbps)	03-119-1-C	000001	GCCS-M
R03368	T0383	2	A		NA		D002		Computer, Tactical	03-108-0-Q	000001	GCCS-M
R03368	T0385	2	A		00041775		SG20220498		Processor, Ruggedized	03-108-0-Q	000001	GCCS-M
R03368	T0387	2	A		P/O Switch		NA		Module, Ethernet Switching, 100BaseFX 8 Port	03-165-1-C	000001	GCCS-M
R03368	T0391	2	A		00041775		SG15021114		Processor, Ruggedized	03-119-1-C	000001	GCCS-M
R03368	T0393	2	A		NA		D003		Computer, Tactical	03-119-1-C	000001	GCCS-M
R03368	T0395	2	A		NA		3730		RAID	03-119-1-C	000001	GCCS-M
R03368	T0397	2	A		00042977		SG20A20917		Processor, Ruggedized	03-1191-C	000001	GCCS-M
R03368	T0399	2	A		00034675		06669931001007		Hub, 8 Slot	03-119-1-C	000001	GCCS-M
R03368	T0400	2	A		00042107		NA		Hub, Workgroup, 12 Port	03-170-7-C	000001	GCCS-M
R03368	T0401	2	A		00042107		NA		Hub, Workgroup, 12 Port	03-148-4-C	000001	GCCS-M
R03368	T0402	2	A		00041776		SG20420895		Processor, Ruggedized	03-148-4-C	000001	GCCS-M
R03368	T0408	2	A		00044063		14530272		Switch, OMNI Stack 5024	03-170-7-C	000001	GCCS-M
R03368	T0410	2	A		00040042		D147		Computer, Tactical	03-170-7-C	000001	GCCS-M
R03368	T0412	2	A		NA		IE24084571		Drive, DAT 12/24GB DDS-3	03-119-0-C	000001	GCCS-M
R03368	T0414	2	A		00043569		IE24090753		Drive, DAT, External 12/24 GF DDS-3	03-119-0-C	000001	GCCS-M
R03368	T0416	2	A		P/O Switch		0522147		Module, Management Switching	03-119-0-C	000001	GCCS-M
R03368	T0418	2	A		N/A		1442037		Module, Ethernet Switching 100Base T	03-119-0-C	000001	GCCS-M
R03368		2	A		NA		D002		Computer, Tactical	03-108-0-Q	000001	GCCS-M
R03368	T0366	2	A		00041775		SG20220497		Processor, Ruggedized	03-108-0-Q	000001	GCCS-M
R03368	T0368	2	A		NA		D006		Computer, Tactical	03-148-C	000001	GCCS-M
R03368	T0370	2	A		00042906		02030006		Switch, Route Protection (POC 912,100Mbps)	03-148-1-C	000001	GCCS-M
R03368	T0372	2	A		NA		D004		Computer, Tactical	03-119-1-C	000001	GCCS-M
R03368	T0374	2	A		00041775		SG20221084		Processor, Ruggedized	03-119-1-C	000001	GCCS-M
R03368	T0376	2	A		NA		D003		Computer, Tactical	03-119-1-C	000001	GCCS-M
R03368	T0378	2	A		00038754		014-9910-069		Chassis, Disk Expansion	03-119-1-C	000001	GCCS-M
R03368	T0380	2	A		00042977		SG20220905		Processor, Ruggedized	03-119-1-C	000001	GCCS-M
R03368	T0382	2	A		NA		D001		Computer, Tactical	03-108-0-Q	000001	GCCS-M
R03368	T0384	2	A		00041775		SG20120840		Processor, Ruggedized	03-108-0-Q	000001	GCCS-M
R03368	T0386	2	A		P/O Switch		NA		Module, Ethernet Switching, 100BaseFX 8 Port	03-119-1-C	000001	GCCS-M
R03368	T0388	2	A		NA		D001		Computer, Tactical	03-119-0-C	000001	GCCS-M
R03368	T0390	2	A		00038754		014-9910-068		Chassis, Disk Expansion	03-119-1-C	000001	GCCS-M
R03368	T0392	2	A		00041775		SG15021117		Processor, Ruggedized	03-119-1-C	000001	GCCS-M
R03368	T0394	2	A		0344418		D005		Computer, Tactical	03-119-1-C	000001	GCCS-M
R03368	T0396	2	A		00041775		SG20221107		Processor, Ruggedized	03-119-1-C	000001	GCCS-M
R03368	T0398	2	A		NA		V20435648		Multiplexer, 16 Channel SCSI (w/MIL-188 Convert	03-119-1-C	000001	GCCS-M
R03368	T0403	2	A		00044063		05121288		Switch, OMNI Stack 5024	03-148-4-C	000001	GCCS-M
R03368	T0409	2	A		00041775		SG20420951		Processor, Ruggedized	03-170-7-C	000001	GCCS-M
R03368	T0411	2	A		00043132		A0180		Server, PC Rugged, 2RU, Vulcan I NT A	03-119-0-C	000001	GCCS-M
R03368	T0413	2	A		00043133							

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UIC: R20550   Validation Aid Page Number: 1   Print Date: 10/1/2002

Ship Name _____ Type/Hull No ___ ILO Page Number Prefix   Page No Reporting Activity Rept ID Reporting Date 1'
USS TARAWA   LHA   1   021001

Action   RIN____ RIC_____ AINAC   Serial Number____ Positional Reference ID Quantity ACN Eqpt WC Compt WC
D   T0766   00033568   EP   6529A80046   1

Location____ EIC____ Equipment/System Designator____ Equipment Functional Description____
04-65-1-C   HM10000 TBMCS

Equipment Identification Number____ Crit Eqpt Ind DISI ISC DOVC VSAC RNV Authority____
                                                          G

CAGE   SAC_____ SCAT____ Hierarchical Structure Code HSCI ISEA____ JCN_____ JCN Page
                                                           C   20550

Parent RIC____ Parent Serial Number____ Parent Equipment Identification Number____ Parent RIN
                                          OL-529B(V)F3

RIC Nomenclature: CP-2231(V)7/USQ-119A(V), COMPUTER,TACTICAL
SAC Description:
RIC Characteristics: Suggested APL/AEL: _____

        0001 -   MFR-RAYTHEON DATA SYSTEMS   NEWPORT BEACH
        0002 -   NHA-AN/USQ-119A(V)
        0003 -   NSN-NONE
        0004 -   EIC-TBD
        0005 -   COMMERCIAL NOMEN-TACTICAL ADVANCED COMPUTER
        0006 -   CONTRACT NR-N66032-92-D-0004
        0007 -   SOURCE OF APL INFO-TAC-3 CONTRACT
        0008 -   TECH MANUAL-EE686-EZ-MMO-010
        0009 -   PROV PARTS LIST-10/14/94 PCN N4660K

157 CM Con...   Microsoft

System: TBMCS AN/USQ-152   **Ship: LHA-1 USS TARAWA**   Date of Groom:
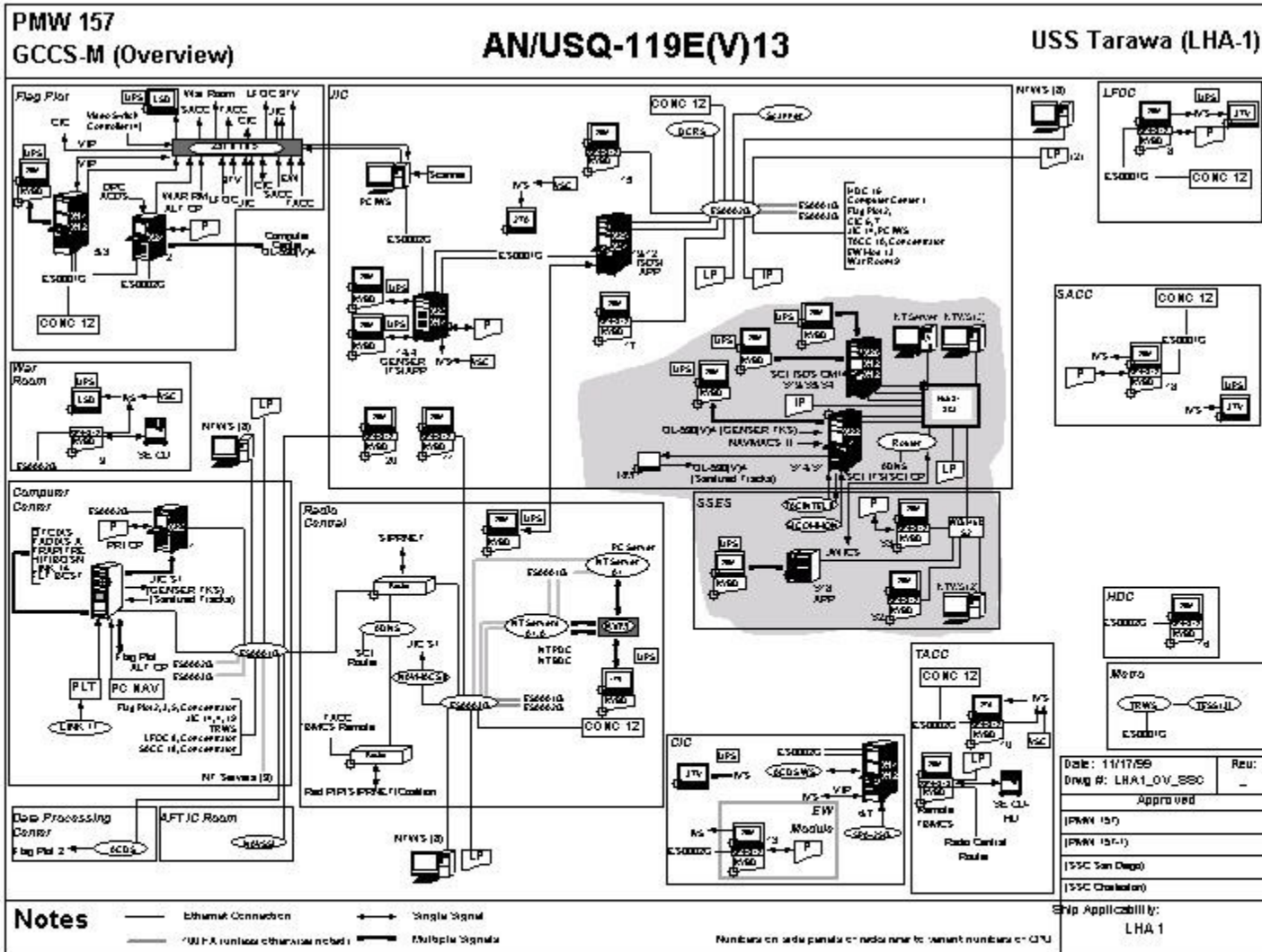
Intel, Server Board STL2 Quick Start Guide	0913-LP-101-1750	☐ Yes ☐ No	☐Paper ☐ CD ROM
Intel, STL2 Server Board Troubleshooting Guide	0913-LP-101-1753	☐ Yes ☐ No	☐Paper ☐ CD ROM
SAIC, Rugged 2RU PC Server. A Configuration SAIC Part No. 165-32000. A+ Configuration SAIC Part No. 165-32100. User Manual	0913-LP-101-0410	☐ Yes ☐ No	☐Paper ☐ CD ROM
Seagate Technology, Inc., Cheetah 73LP Family ST37405LW/LWV/LC/LCV, ST336605LC/LCV Product Manual	0913-LP-101-2089	☐ Yes ☐ No	☐Paper ☐ CD ROM
Cabletron Systems Inc., FOT-F14, FOT-F24, FOT-F25 802.3 10BASE-FL Transceiver User's Guide	0913-LP-100-2744	☐ Yes ☐ No	☐Paper ☐ CD ROM
Cabletron Systems Inc., MMAC-M8FNB Multi-Media Access Center Overview and Setup Guide (10/04/93)	0913-LP-737-0100	☐ Yes ☐ No	☐Paper ☐ CD ROM
		☐ Yes ☐ No	☐Paper ☐ CD ROM
		☐ Yes ☐ No	☐Paper ☐ CD ROM

Part 2 - Supply/ 3M Section

APLs	Description	Amplification (If Necessary)	Located in SOEAPL or OMMS-NG	Remark and Follow Up Notes
NA	Cartridge Tape Drive, 5.0 GB, 8mm	Eliant 820/8705	☐ Yes ☐ No	
00041775	Processor, Ruggedized	HP C3600-2	☐ Yes ☐ No	
00041775	Processor, Ruggedized	HP C3600-2	☐ Yes ☐ No	
00041775	Processor, Ruggedized	HP C3600-2	☐ Yes ☐ No	
00041775	Processor, Ruggedized	HP C3600-2	☐ Yes ☐ No	
00041775	Processor, Ruggedized	HP C3600-2	☐ Yes ☐ No	
00041775	Processor, Ruggedized	HP C3600-2	☐ Yes ☐ No	
00041775	Processor, Ruggedized	HP C3600-2	☐ Yes ☐ No	

11 x 8.5 in   ☐ 🕀 ⊞ ◄

Micr...   ✉ Training for

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Data Entry Form

LHA-1
TITLE

USS Tarawa

| | - | GCCS-M | AN/USQ-119E(V)13 | SSC | 10/1/2001 | | *Ship Drawing* |
| | REV | SYSTEM | VARIANT | TYPE | LAST UPDATE | APPROVE DATE | 1/2 |

Item No.	Exist Qty	New Qty	Total Qty	RefDes	Description	Part Number	Remarks
1	0	1			GCCS-M Afloat	-	
D1	1	0	1		GENSER UNIX EQUIPMENT	-	
	1	0	1		Computer Group, Tactical	OL-529B(V)F10/USQ-119C(V) (JOTS 14/4)	
	1	0	1	A1	Rack, 55 Inch, Rugged Shipboard Equipment	474000002	
	1	0	1	A1-1	Panel, Input/Output	80-30265-02	
	1	0	1	A1A1	Chassis, Power Distribution	04534-08-001	
	1	0	1	A1A2	Chassis, Disk Expansion	52-42009	
	4	0	4	A1A2A1-4	Drive, Hard Disk, 4.x, FW	4GBFW-HD	
	1	0	1	A1A2A5	Drive, Tape, 5.0 GB Cartridge, 8mm	EXB-8505	
	0	2	2	A1A3	Assembly, Processor, C3000/3600	129-32000	
	0	1	1	A1A3A1	Processor, Ruggedized	HP C3600-4	
	0	1	1	A1A4A1	Processor, Ruggedized	HP C3600-4	
	2	0	2	A1A4A2	Card, MIC Hill Adapter	HIL 100	
	1	0	1	A1A5	Power Supply, Uninterruptible (1.5 kVA)	ETI0001-N1A1-1/1.5K	
	1	0	1	A1A6	Assembly, 9 Fan Tray	KTG3333-X102A	
	2	0	2	A1A7,8	Transceiver, Fiber Optic LAN	FOT-F25	
	0	1	1	A1A9	POC 912	912-M-NB-88-X1034AST	
	1	0	1		Computer Group, Tactical	OL-530(V)4/USQ-119A(V)	
	1	0	1	A1	Rack, 72 Inch, Electronic Equipment Cabinet	9246-1000	
	1	0	1	A1-1	Assembly, Shock Isolation	72-32186	
	1	0	1	A1A1	Assembly, Power Distribution Panel	72-13001	
	1	0	1	A1A2	Panel, Patch	DPS-4-1CMF	No. 1
	1	0	1	A1A3	Panel, Patch	DPS-4-1CMF	No. 2
	1	0	1	A1A4	Computer, System Maintenance Terminal	CAT-1010	
	1	0	1	A1A5	Monitor, Multisync, Flat Panel	FPD-16	
	1	0	1	A1A6	Assembly, Shoebox, Large	9244-917	
	1	0	1	A1A6A1	Printer, DeskJet (C4562B)	HP-696C	
	1	0	1	A1A6A2	Trackball (SMT)	100296-520	
	1	0	1	A1A6A3	Keyboard, SMT	G80-1800FU16	
	1	0	1	A1A7	Chassis, Communications Processor, Generic Front	VCV-11/18TIB	
	1	0	1	A1A9	Power Supply, Uninterruptible, Rackmount, 1.5K	UPS1-1.5K-1G-SRN	
	1	0	1	A1A10	Blower, Air	KPL701A-1	
	1	0	1	A1A11	Assembly, Exhaust Fan	MR2B3	

Monday, October 14, 2002 9:24:14 AM

Unit   Piece   Component

Page 1

LHA-1
TITLE

| - | GCCS-M | AN/USQ-119E(V)13 |
| REV | SYSTEM | VARIANT |

8.5 in

157 CM Con... | Micro...

- **Provides a powerful data collection and data management tool**

- **Automated system enables installers to enter accurate engineering data on line which reduces time and error.**

- **Platform enables users to deploy and manage mobile database applications from any desktop via a Web browser.**

- **Installers away from the office can collect information at the point of activity on any Palm OS device, even when disconnected from the network and securely synchronize via TCP/IP network to a central database.**

- **Provides installer with necessary documentation for out brief**

- **Allow installer to comply with RMMCO check-in requirements**

- **Provides 3M coordinator with updated information at time of install**

- **Open Architecture for ease of data migration to and from whatever main database the Navy wishes to use (ie. CDMD-OA, NDE, ERP)**

- **Rapid development environment for quick response to customers needs**

- **Web base application designed for easy use with no custom software to be loaded**

- **Time and Labor reduced:**

  – All documentation is done on-line.

  – No waiting for mail.

  – All necessary parties are notified before and after install.

- **Single source of data – common process**

Asses the current requirements of each command development a plan and timeline for Implementa

- **Emerging Technologies :**
  - Barcodes
  - Contact Memory Buttons
  - Smart Chip
  - Wireless Syncronization

- **Mike Wickersham – (619) 221-4676 Business Development**
  - **Mwickersham@northropgrumman.com**

- **Joe Acquafredda – (619) 221-4737**
  - **Jacquafredda@northropgrumman.com**

- **Cyndi Dent – (619) 221-4650**
  - **CDent@northropgrumman.com**